



Options to Facilitate Orderly Movement of Milk to California's Fluid Markets

Overview

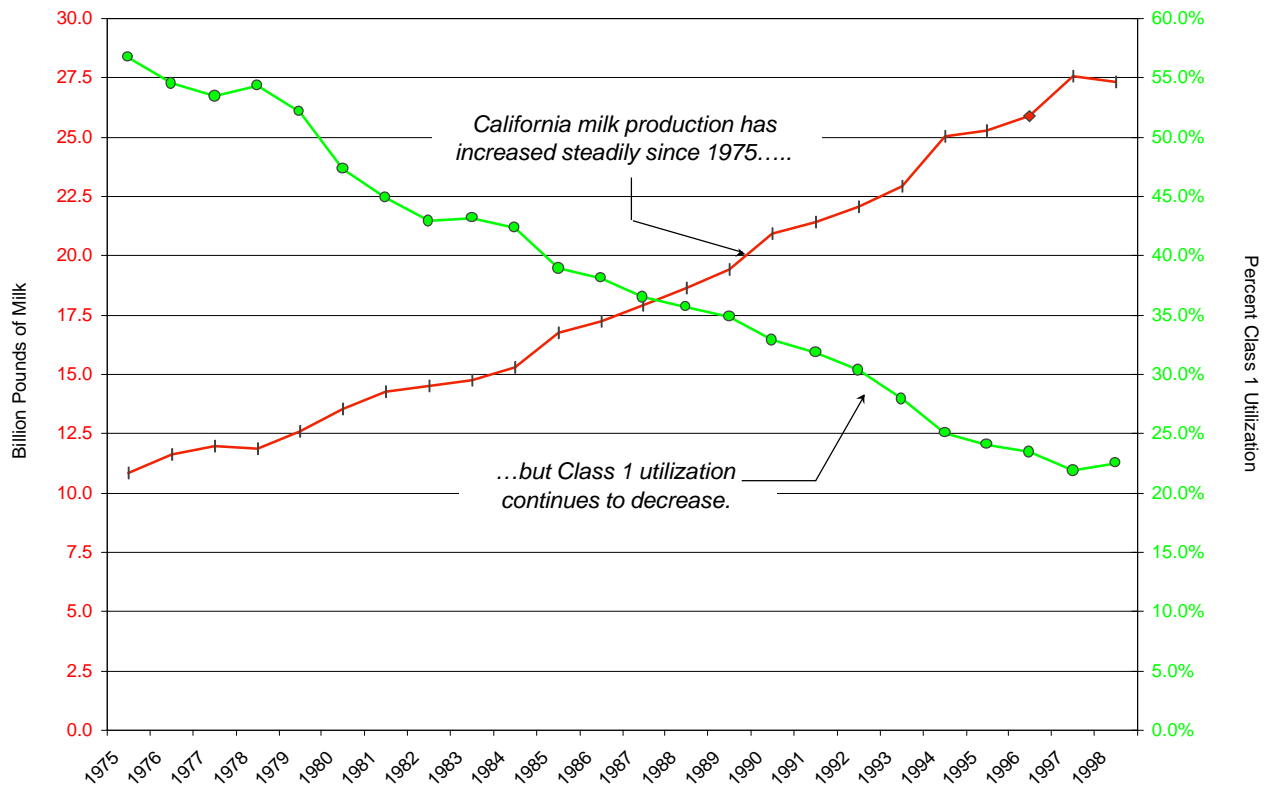
The Milk Pooling Plan, which was instituted in 1969, fundamentally changed the means of distributing revenues from milk sales to dairy farmers. Prior to 1969, producers competed for contracts with Class 1 handlers. In contrast to current regulations, there existed no mechanism that compelled producers to share the higher revenues from these sales with other producers. The Milk Pooling Plan introduced the concept of equitable producer prices by sharing or pooling revenues from milk sales among all producers in the state. However, the elimination of direct contractual arrangements between producers and handlers removed the incentive for producers to ship milk to fluid plants.

Producers, who locate in rural areas for the most part, have been inclined to minimize hauling costs by shipping milk to local plants, which tend to be manufacturing plants. As these changes in milk movement patterns have evolved, some fluid milk handlers have been forced to develop milk shipment incentives, usually through premium schedules, to attract adequate milk supplies. The need to offer premiums to obtain milk for processing appears to run counter to intuition because Class 1 (fluid) utilization in California has decreased significantly even as California's milk supply has continued to grow (Figure 1). During months of low milk production, a fluid handler's task of attracting an adequate milk supply may become even more difficult. This paper reviews the current methods used to encourage milk shipments to fluid milk plants and explores some possible alternative procedures.

Background

The basic purpose of the Stabilization and Marketing Plans is to promote and encourage the intelligent production and orderly marketing of milk. Underlying this purpose is a more specific goal to minimize economic disruptions and waste in the production and marketing of milk. This goal is achieved primarily through the establishment of minimum prices paid by processors to dairy farmers that are based on all relevant economic factors. Minimum farm prices are intended to ensure an adequate and continuous supply of milk at prices to consumers which are fair and reasonable.

Figure 1. Milk Production and Class 1 Utilization in California, 1975 to 1998



In 1969, legislation was enacted which authorized the establishment of the Milk Pooling Plan. The creation of the Milk Pooling Plan fundamentally altered the means of distributing milk sales revenues to dairy farmers. Prior to 1969, the revenues producers received were largely dependent upon how the milk was used by the processor. Producers received the highest prices for milk used in Class 1 products, with lower prices for manufactured products. During the late 1960s, producers could increase their incomes by obtaining the Class 1 contracts and terminating their lower-valued contracts with manufacturing plants. Market instability plagued this system because a large number of dairy producers competed fiercely for the limited number of highly coveted Class 1 contracts. A system was needed to reduce the instability in milk markets by removing dairy producers' incentive to obtain Class 1 contracts by any means possible.

The idea behind a milk pooling plan is to distribute revenues from milk sales equitably among producers. A fundamental tenet of a milk pooling plan is that it makes no difference whether or not a producer has a Class 1 contract because all revenues are pooled and redistributed according to the payout mechanism specified. The California pooling system uses a two-tiered pricing mechanism. "Overbase" is the basic pool price. "Quota" is an entitlement that allows a producer to receive a price that is \$1.70 per hundredweight higher than the overbase price.

When the idea of pooling milk sale revenues was offered for consideration, dairy producers made some concessions. In particular, dairy producers pledged that enough milk would be available to satisfy the Class 1 market in exchange for the right to pool milk sale revenues. Nevertheless, an unintended consequence of instituting the Milk Pooling Plan was the removal of the primary economic incentive for producers to market their milk to a fluid plant. A variety of mechanisms have been made effective to ensure the predictable and sustainable flow of milk to fluid processing plants.

Mechanisms Currently Used to Encourage Shipments to Fluid Milk Plants

Basic Pool Requirements

The Milk Pooling Plan requires producers to ship milk to a pool plant if the producer wishes to participate in the pool and receive pool prices. In addition, the pool plant must have direct or indirect Class 1 or mandatory Class 2 usage each month. However, neither statute nor the Pooling Plan specify a minimum quantity of milk processed as Class 1 or mandatory Class 2 to qualify the plant.

Transportation Allowances

In June 1983, a system of “transportation allowances” and “regional quota adjusters” (RQAs) replaced location differentials.¹ Transportation allowances partially compensate producers for the cost of hauling milk from a producer’s ranch to qualified plants. These allowances apply to all market (grade A) milk moving from dairy farms to plants in qualifying areas that process more than 50 percent of the milk received into Class 1, Class 2, and/or Class 3 products (Figures 2 to 5). In addition, cooperative organizations receive transportation

¹Quota and Location Differentials — In the past 30 years, several regulatory tactics have been used to encourage desirable milk movement patterns, i.e., adequate milk supplies available to all fluid milk processing plants. When the Milk Pooling Plan was instituted in 1969, location differentials were established to provide producers with economic signals to move milk to designated counties. Location differentials were added to or deducted from quota payments to producers and were determined by the location of the plant that first received the milk. When milk was moved to designated counties, favorable location differentials offset the added cost of transporting milk.

As California milk production began to increase, overbase milk became increasingly larger share of the total milk production. As a result, location differentials based solely on quota milk were no longer an efficient means of ensuring that adequate milk supplies would be made available to Class 1 plants, and consequently, location differentials were discontinued and other regulatory instruments were instituted.

Figure 2. Transportation Allowance System in California
Linear Distances from San Leandro

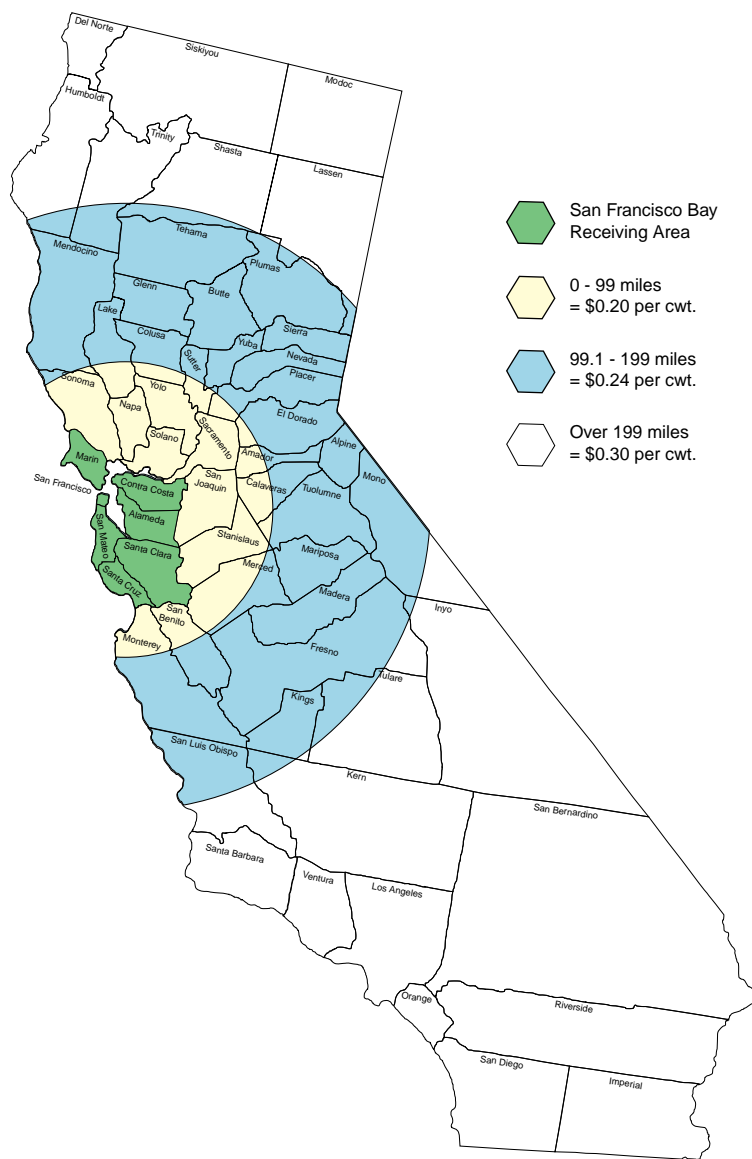


Figure 3. Transportation Allowance System in California
Linear Distances from Vallejo

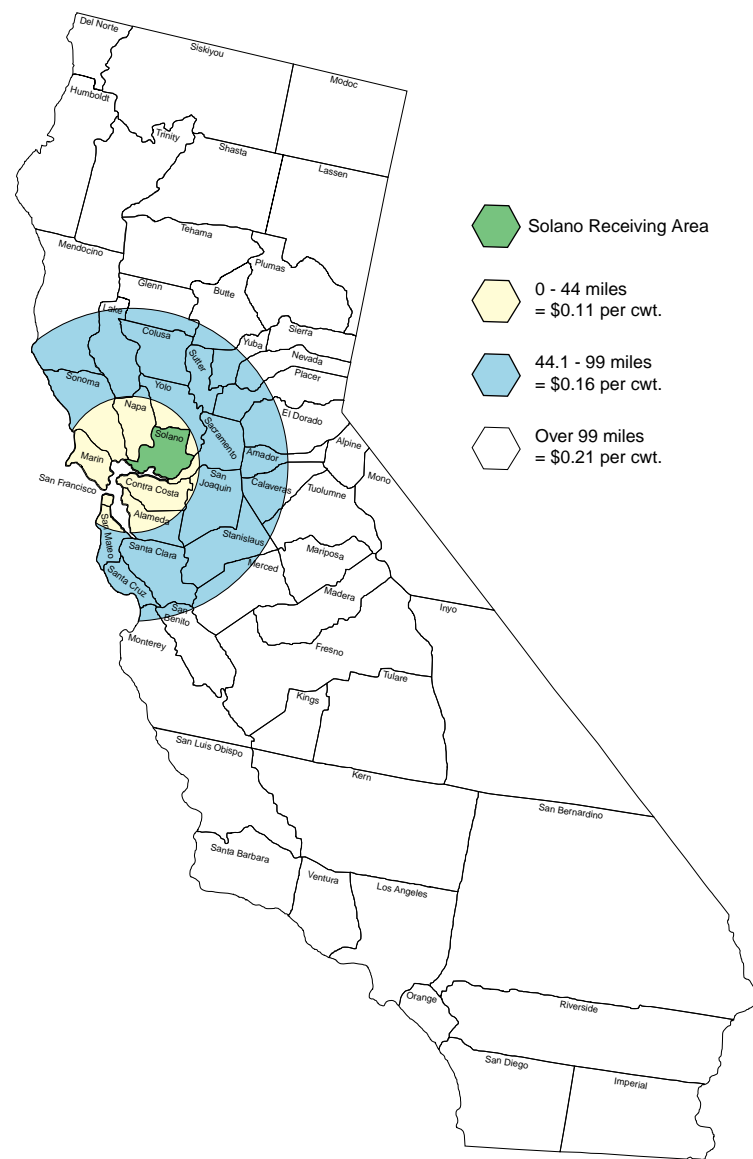
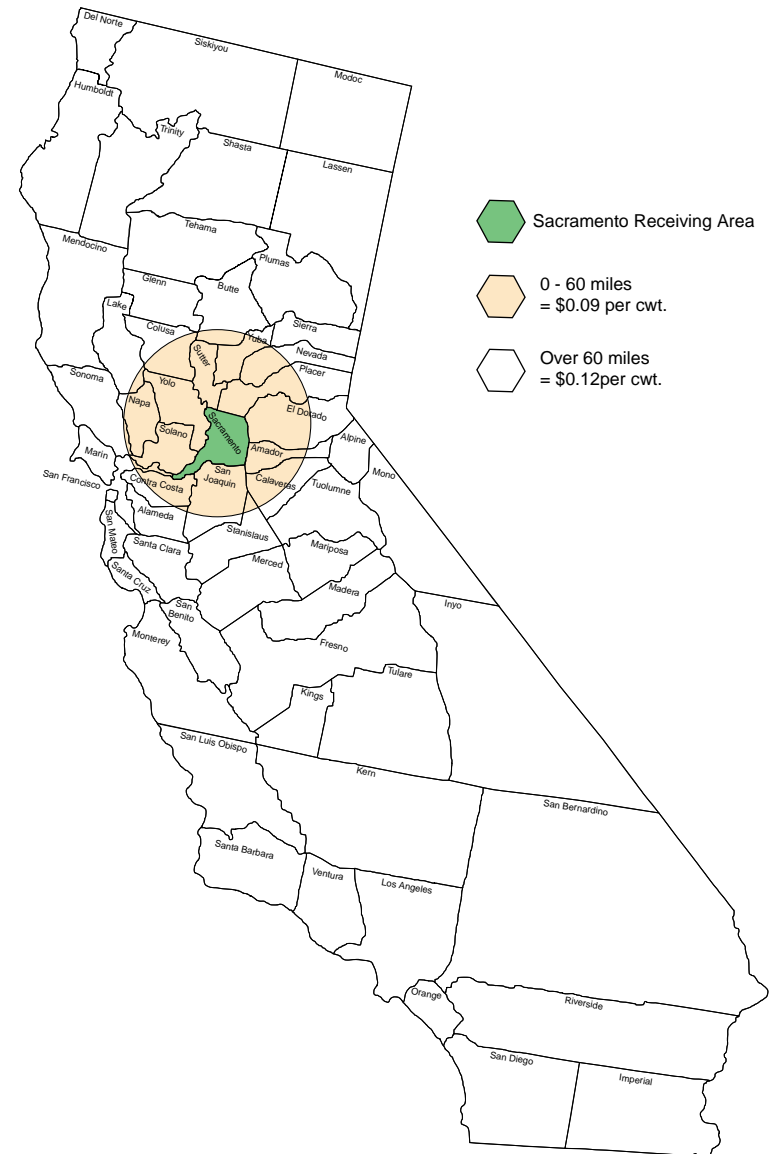
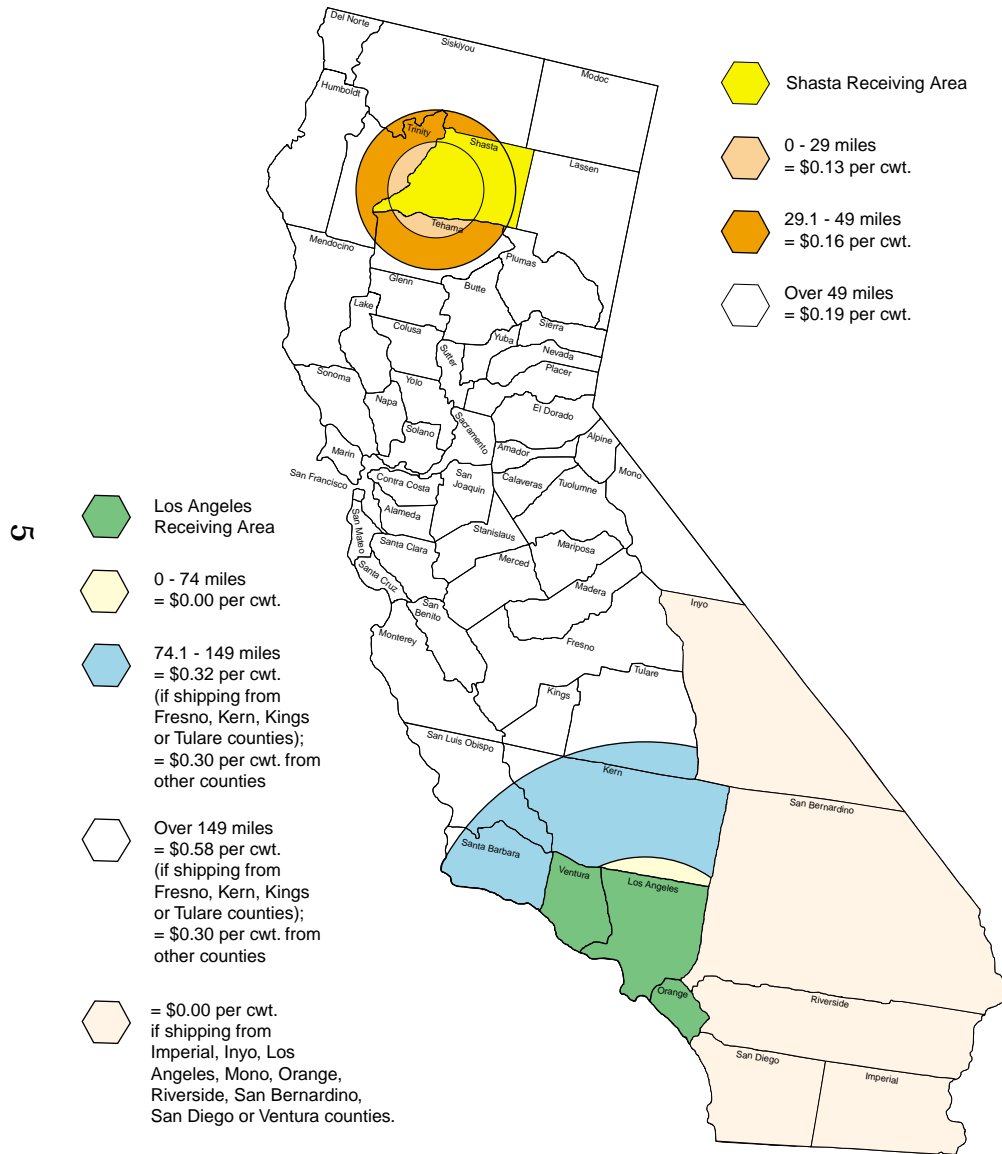


Figure 4. Transportation Allowance System in California
Linear Distances from Redding and from Los Angeles

Figure 5. Transportation Allowance System in California
Linear Distance from Sacramento



allowances on shipments to their plants if the plant is located in a deficit area and if the plant supplies 40 percent of its receipts for Class 1 usage.

Regional Quota Adjusters

While RQAs do not provide any direct incentive to move milk to Class 1 plants, they relate to a basic principle of location economics. Most Class 1 plants are located in or near the major population centers for economic reasons. Under normal conditions, Class 1 plants attract the nearest milk supply over more distant rural milk production areas. As a consequence, milk produced in close proximity to processing plants has more value.

RQAs, which replaced location differentials, follow this economic principle. RQAs are deducted from the quota payments to producers and are determined by the geographical location of the producer's dairy. RQAs apply to the hundredweight equivalent of quota milk produced. Presently, these rates range from 5 cents per cwt. for dairy farms located in North Bay counties to 27 cents per cwt. for dairy farms located in Fresno, Kings, and Tulare counties. There are no RQAs assigned to dairy farms located in the southernmost part of the state (Figure 6).

Transportation Credits

In 1981, transportation credits were introduced to reduce the cost of interplant shipments. At one time, marketing areas were more numerous, and differences in hundredweight prices among milk marketing areas were sufficient to cover the cost of moving milk from one processing plant to another. However, with marketing area consolidation, these price differences were no longer capable of covering the cost of interplant shipments. Transportation credits offset some of the cost of hauling milk assigned to Class 1 usage from plants in designated supply counties to plants in designated deficit counties (Figure 7).

Call Provisions

Milk movement requirements, commonly referred to as "call provisions", were instituted in 1979. They function by bestowing a ranking system for quota milk use when insufficient milk supplies are available to meet the demand for fluid milk. Basically, call provisions require that manufacturing plants participating in the pool (i.e., plants receiving milk entitled to the quota price) must make a portion of the milk received available to plants processing Class 1 dairy products upon request. Call provisions allow fluid plants to request milk from manufacturing plants, thus lessening the impact of producer shipment decisions. In other words, it does not matter to which plant a producer ships milk; call provisions give qualifying Class 1 plants the ability to obtain milk from manufacturing plants when it is needed. However, from the manufacturing plant viewpoint, efficiency of size may be lost when milk is diverted to a fluid

Figure 6. Regional Quota Adjusters in California

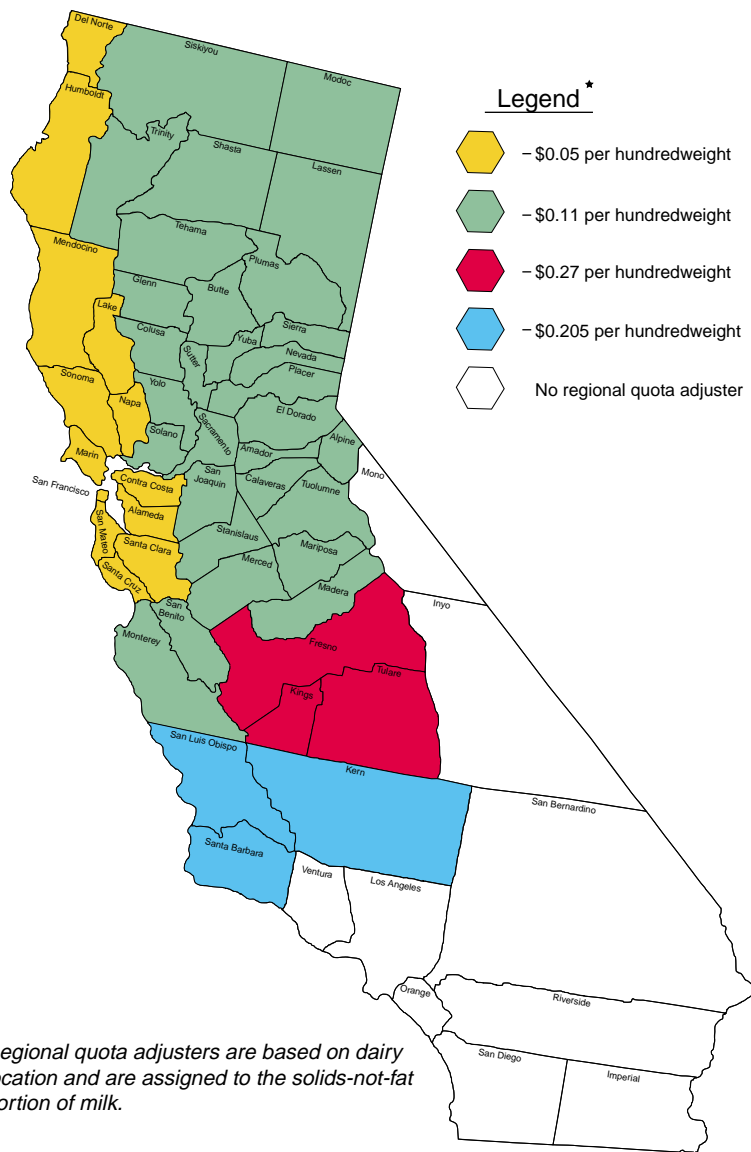
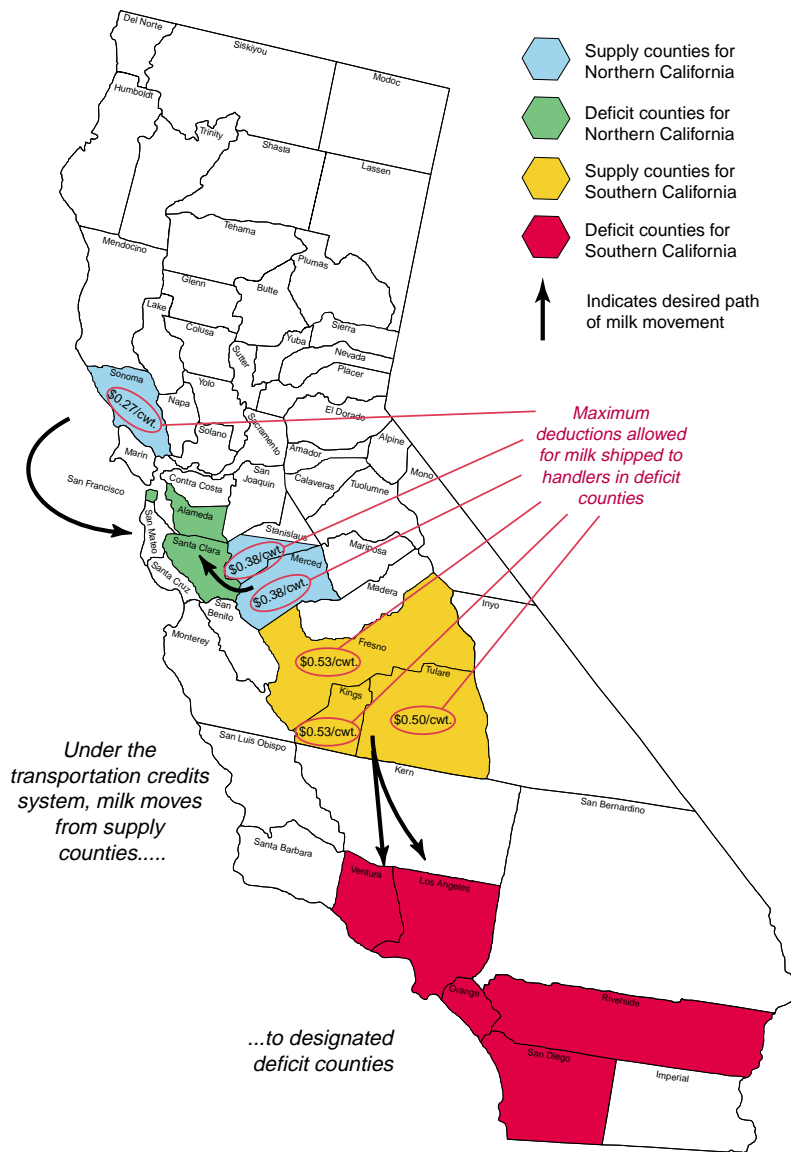


Figure 7. Transportation Credit System in California



milk plant. Because fixed operating costs must be allocated to a decreased manufacturing volume, the manufacturing plant may require high “give up” charges on milk diverted to a fluid plant.

The Department receives public comments from June 10 to July 10 each year concerning the implementation of these provisions. Upon reviewing the comments and assessing market conditions, call provisions may be implemented for any period of one or more months from September through April each year or not at all. The designated “eligible” months are significant because milk production is seasonally low from the fall into the following spring.

Issues to Consider

Changes in Market Structure

Prior to the institution of the \$1.70 fixed differential between the quota price and the overbase price, only quota-holding producers benefited from positive changes in the Class 1 revenues. After implementation of the fixed differential, all dairy farmers who participated in the pool, rather than just producers who owned quota, benefited from higher Class 1 prices or increased fluid milk sales.

However, since the inception of the pooling program, there have been few significant changes in the mechanism used to compensate those dairy farmers who supply milk to Class 1 plants. Consequently, there is no direct and compelling economic reason for a producer to ship milk to a fluid milk plant. In the late 1960s and early 1970s, this was not of concern because Class 1 utilization hovered near 65 percent of California’s total milk production. Today, Class 1 utilization is about 22 percent. More importantly, almost three quarters of California’s production is used in cheese, butter and nonfat dry milk.

To further compound the problem, many manufacturing plants pay premiums, and most cooperative plants distribute annual dividends. These monies are paid to producers in addition to regulated minimum prices and are not subject to pooling. The producers who ship milk to these manufacturing plants receive both the appropriate pool price (quota, overbase or a blend of the two) plus the associated premium or dividend. This economic incentive causes some milk production that would normally be shipped to fluid milk plants to be diverted to manufacturing plants.

The Southern California Milk Marketing Area exemplifies the change in market structure. There currently is enough milk production in the Southern California milk marketing area to serve all the Class 1 needs and maintain a 40 percent standby reserve to handle the fluctuations in the demand and supply for Class 1 products. Nonetheless, dairy farmers incurred a total cost of approximately \$6.4 million to bring milk from outside Southern California to serve the

area's Class 1 needs. In addition, the fluid milk processors annually support implementation of call provisions as a means of obtaining enough milk to satisfy their customers during the months of seasonally short production.

Furthermore, in the 30 years since milk pooling became effective, the state's milk production has gradually shifted away from the urban markets, where Class 1 plants are located, to rural areas that are further from urban markets. This situation is readily apparent in Southern California's Chino Valley where land previously occupied by dairy farms has been sold to developers, and the dairies have moved north to the more rural counties of Kern, Kings and Tulare. The exodus of dairies from the Chino Valley has left fluid milk processors in the Los Angeles Basin with the challenge of attracting more distant milk supplies to fulfill the needs of their customers. It should be clear that the use of the current policy alternatives, i.e., transportation allowances and credits, will only add to the total cost that dairy farmers are incurring to supply milk to the Southern California Class 1 market.

Table 1. Cost of Milk Movement Incentives to California Dairy Producers

	<i>Million Dollars</i>					Change 1994 - 1998
	1994	1995	1996	1997	1998	
Trans. credits	\$2.1	\$1.8	\$2.2	\$2.6	\$2.6	+24%
Trans. allowances	\$4.1	\$4.5	\$4.5	\$5.7	\$6.9	+68%
RQAs	\$9.9	\$9.9	\$9.9	\$10.0	\$10.1	+2%
<i>Annual Total</i>	<i>\$16.1</i>	<i>\$16.2</i>	<i>\$16.7</i>	<i>\$18.3</i>	<i>\$19.6</i>	

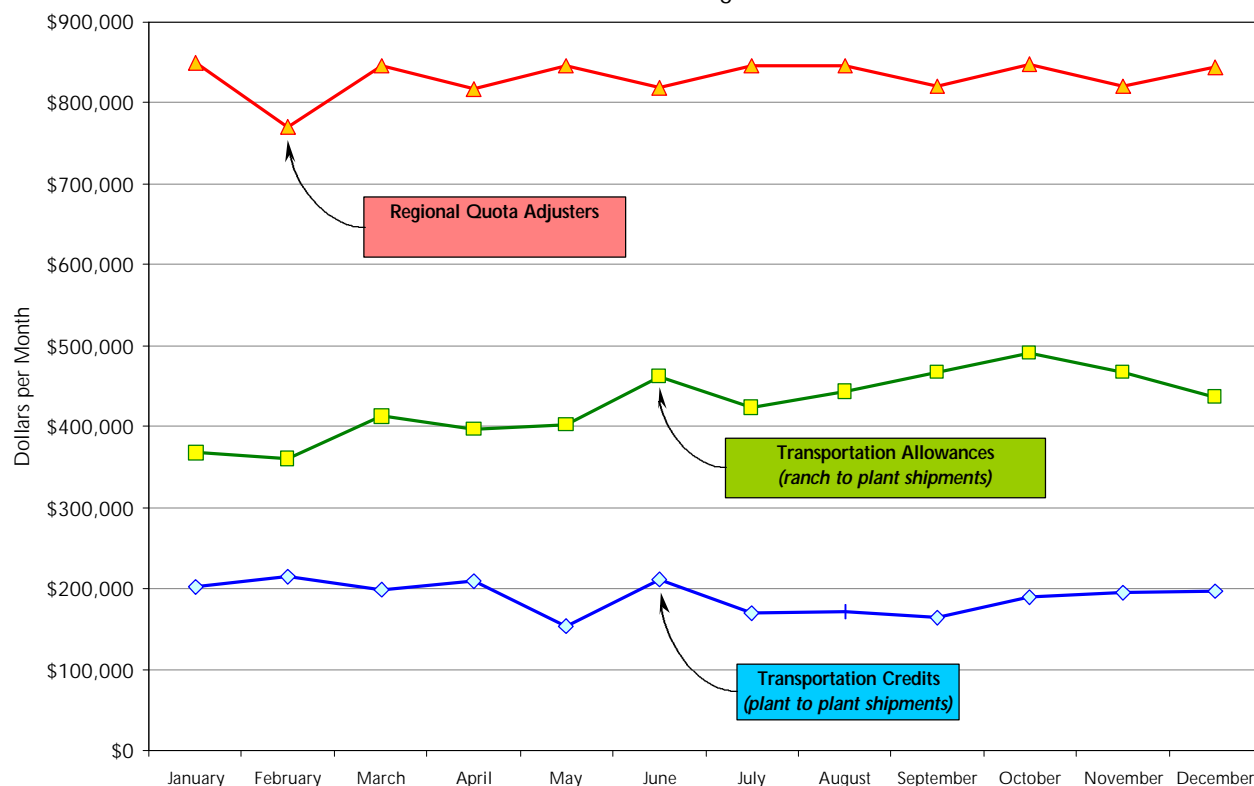
Cost of Transportation Credits, Allowances and RQAs

The current incentives for milk movement are a significant cost to the dairy producers of California (Table 1). The costs of these mechanisms are subtracted from the revenues that are distributed to farmers.

Table 1 reveals that, from 1994 to 1998, the annual cost of:

- transportation credits has risen by \$500,000 or 24%.
 - The increase in cost can be attributed, in part, to rate increases in 1994 and 1996.
- transportation allowances has risen by \$2.8 million or 68%.
 - Nearly all of the increase has been the result of increased use of the allowances, i.e., the last rate change occurred in 1994 and was insignificant.
- regional quota adjusters has risen by \$200,000 or 2%.

Figure 8. Average Cost per Month of Current Milk Movement Incentives, 1994 through 1998



There does not appear to be any significant seasonal pattern to the cost of the three milk movement incentives (Figure 8). The cost of RQAs is remarkably consistent from month to month, but the cost of transportation allowances appears to increase throughout the year with the highest cost coming in September, October and November. On average, transportation credits cost producers less during the late summer and early fall months.

Increasing Incentive to Obtain Transportation Credits and Allowances

As milk production and marketing becomes market-oriented, the level of competition among producers intensifies. Obtaining new or higher rates for transportation allowances can mean the difference between economic success or failure of a dairy. Consequently, there are a growing number of requests to establish new or higher transportation allowance rates. Cooperatives that ship to fluid milk plants and fluid plants that receive milk from other processing plants have a motivation to obtain new or higher transportation credits. Moreover, there seems to be a growing perception that if some farmers receive transportation allowances then all farmers should be entitled to them. Recently, the Department, after careful evaluation through the formal hearing process, de-

nied a proposal to make effective a transportation allowance for milk produced in Imperial County. In the current litigation between the Department and out-of-state producers, one of the issues of contention is that out-of-state producers do not receive transportation allowances.

Two Categories of Alternatives for Milk Movement

The alternative approaches to providing Class 1 plants with increased availability of a milk supply center on two themes. One set of alternatives threatens a penalty (economic loss) for plants or producers that fail to supply milk to the Class 1 market, and the other set promises a reward (economic gain) for plants or producers that supply the Class 1 market.

Alternatives that Penalize Non-Participatory Plants/Producers

Stricter Shipping Requirements

Instituting more stringent requirements of the plants participating in the pooling program provides a straightforward approach to problem. Qualification standards are intended to obligate plants that participate in the pool to divert or to sell milk to Class 1 plants, especially when milk production is low and fluid milk consumption is high. When qualification standards are not set high enough, manufacturing plants may be able to benefit from the pooling system. In other words, by virtue of the classified pricing structure that exists in California, manufacturing plants are able to draw money from the pool to augment the prices paid to dairy producers for milk. In federal milk marketing orders, qualification standards have been the traditional means used to avoid this problem. Plants that do not perform as expected or needed may not draw money from the pool. In this case, to “perform” means that a manufacturing plant ships milk to Class 1 markets when it is needed and without exorbitant over-order charges.

Simply, if a manufacturing plant wants to share in the Class 1 pool, it must sell milk for Class 1 use, especially when it is needed. Currently, there is no minimum amount of milk that a manufacturing plant must divert to a Class 1 plant in order to participate in the pooling program. Manufacturing plants in California can ship just one load of milk per month to a Class 1 plant to maintain their pool status. As such, a readily apparent solution to the problem of milk movement is to establish a minimum volume of milk to be diverted from manufacturing plants to Class 1 plants at a meaningful level.

Unfortunately, setting higher performance standards does have some undesirable effects. First, it may result in unintended market inefficiencies. Manufacturing plants may ship milk long distances for the sole purpose of qualification, despite the availability of adequate milk supplies that are in a closer proximity to the Class 1 plant. Second, stricter shipping requirements may lead to “round

tripping” of milk, i.e., milk that is shipped from a manufacturing plant to Class 1 plant and then returned to the manufacturing plant simply to satisfy qualification standards on paper. Finally, stricter requirements for pool participants may lead to development of small and inefficient Class 1 production facilities just to fulfill qualification requirements.

Limiting Pool Participation of Manufacturing Plants

Current regulations detailed in the Milk Pooling Plan for Market Milk allow manufacturing plants that participate in the pooling program to draw money from the pool on all of their milk. Under this alternative, manufacturing plants would be unable to continue to participate fully in the pool. Instead of receiving a pool draw on all milk processed, they would receive only the pool draw on shipments of milk to Class 1 handlers. If the goal is to provide an incentive for manufacturing plants to give up milk to Class 1 handlers, this alternative does provide a significant incentive for cheese and butter/powder plants to divert milk. However, it should also be evident that the vast majority of the manufacturing sector that benefits from the current set of regulation would not be in favor of such a change.

Requiring Quota Holders to Serve the Class 1 Market

With the introduction of the pooling program came the demise of the traditional contracts with Class 1 handlers, and consequently, the incentive for a producer to ship to a Class 1 handler was diminished. To facilitate the movement of milk to Class 1 handlers, the industry could require that producers receiving the most benefit from the pooling plan, i.e., quota holders, fulfill an obligation of the industry to supply those markets with milk when needed. Simply, a producer who holds quota is required to ship a fraction of the milk produced to a Class 1 handler. Alternatively, the producer could contract with another producer or cooperative association to fulfill these obligations.

The benefits of such a system are numerous, but one major drawback looms. From an equity viewpoint, the quota holders would have the responsibility of supplying milk to that segment of the industry. No call provisions would be necessary because milk movements would be arranged prior to the receipt of producer milk by processing plants. The downside to this approach is that inefficient milk movements will result as quota holders attempt to fulfill their obligation to the Class 1 market. Milk may have to travel long distances just to fulfill a regulatory requirement when milk closer to the target area may be available. However, if producers are allowed to contract with other producers or a cooperative association to fulfill their obligations, the inefficiencies may be reduced considerably.

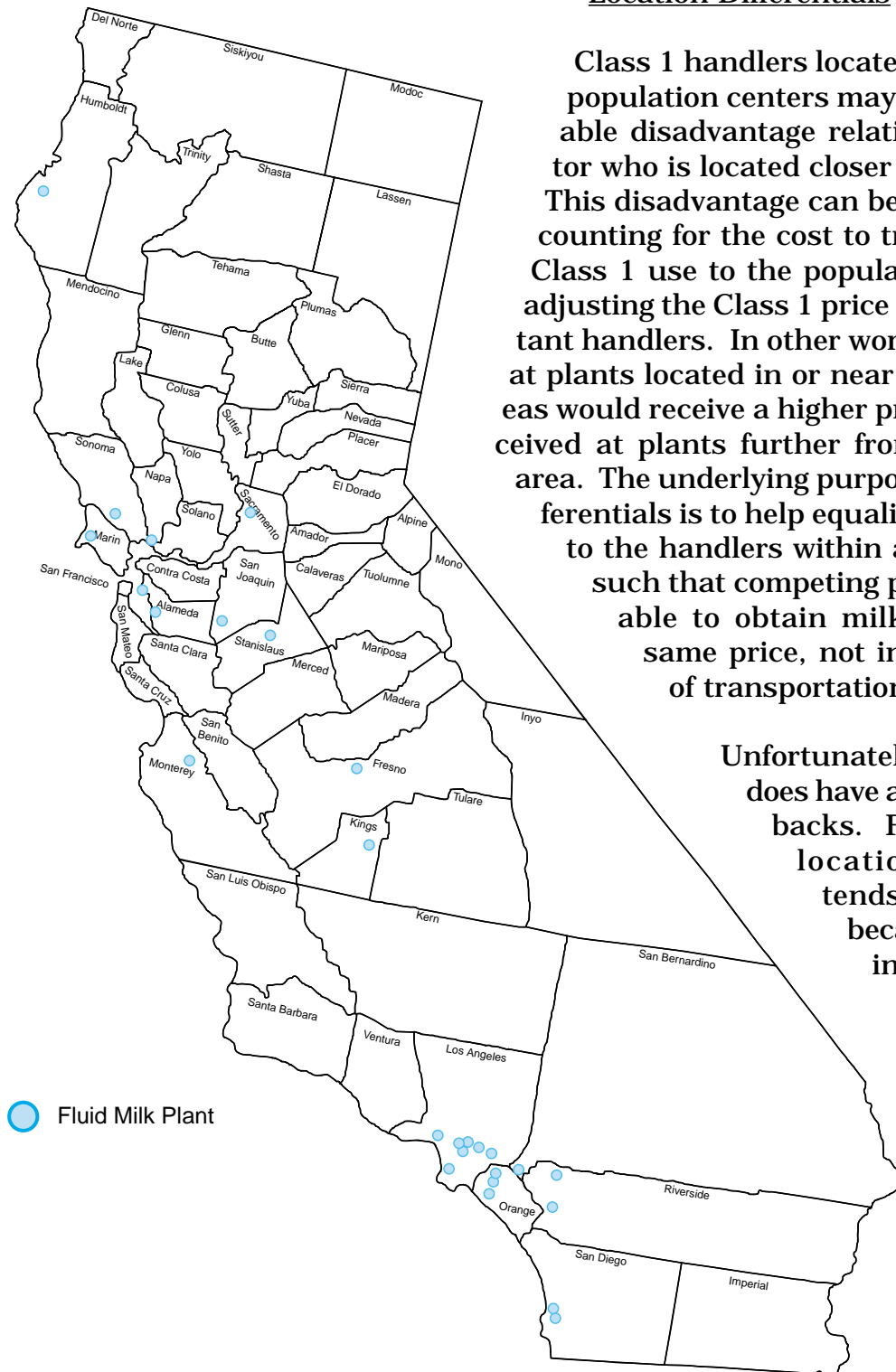
Figure 9. Approximate Locations of Fluid Milk Processing Plants

Alternatives that Reward Participatory Plants/Producers

Location Differentials

Class 1 handlers located in or near large population centers may be at a considerable disadvantage relative to a competitor who is located closer to milk supplies. This disadvantage can be mitigated by accounting for the cost to transport milk for Class 1 use to the population centers and adjusting the Class 1 price downward to distant handlers. In other words, milk received at plants located in or near metropolitan areas would receive a higher price than milk received at plants further from a large urban area. The underlying purpose of location differentials is to help equalize raw milk costs to the handlers within a marketing area such that competing processors will be able to obtain milk at the roughly same price, not including the cost of transportation.

Unfortunately, this approach does have a number of drawbacks. First, a system of location differentials tends to be inflexible because the underlying presumption is that all milk moves in one direction within a marketing area. Second, there may be more than one major population center within the marketing



area, and these multiple “target areas” may make the task of developing meaningful location differentials difficult. San Francisco and Los Angeles are two obvious such large cities, and fluid milk plants tend to locate in or near these two focal points (Figure 9). Fluid milk processing plants in the central valley are closer to the milk supply but compete for fluid milk sales throughout the state. Because these plants do not have to pay the same premiums as the plants in the San Francisco Bay Area to attract milk, they may be able to offer their product to retailers at a lower price than their competitors. Third, there are no set rules for determining the appropriate amounts for location differentials. The challenge to administrators is to establish differentials that are large enough to encourage milk to move to Class 1 processing plants, but not so large as to disrupt the functionality of the milk marketing system. Last, inefficient movements of milk may not be eliminated with location differentials, i.e., milk may still be shipped long distances even though adequate supplies are available closer to the buyer.

Individual Handler Pools

Prior to the establishment of a system that pools and redistributes revenues to dairy producers, individual handler pools were common. As the name indicates, revenues from milk sales were shared only among producers shipping to the handler and not with all producers in the milk marketing area. Individual handler pools were viewed in an unfavorable light because of the consequences of these types of pools, i.e., producers often used predatory tactics in an attempt to obtain entrance into a fluid milk processor’s pool. Nonetheless, the individual handler pools provided a substantial incentive to sell milk to Class 1 handlers, a distinction that cannot be claimed by the present pooling system.

Individual handler pools offer two significant benefits but have their drawbacks as well. First, individual handler pools channel all Class 1 revenues to those plants and producers who are serving the Class 1 market. Second, call provisions, which tend to be unpopular with manufacturing plants, are unnecessary with individual handler pools. The most obvious downside to individual handler pools is the impact on the pooling system within a marketing area. Individual handler pools move away from the most basic premise of pooling — equitable treatment of producers. Individual handler pools promote orderly marketing, but at the expense of price equity among producers.

Strictly speaking, individual handler pools are probably not feasible because the integrity of the pool would be affected. A slight modification to this approach might make individual handler pools more workable while still retaining many of the benefits. The idea is to give Class 1 handlers a means of rewarding the producers who serve the Class 1 market without greatly affecting price equalization within the marketing area. Specifically, a portion of the Class 1 revenues could be designated for the individual handler pool with the remaining revenues pooled on a market-wide basis.

Summary

As milk production in California continues to increase, an ever-larger share is being used in manufactured dairy products. Premiums and dividends paid by manufacturing plants to attract milk are not pooled and provide a direct incentive for producers to ship milk to those plants. These premiums and dividends will continue to have a profound impact on the growing annual cost of directing milk to Class 1 plants via the current mechanisms of transportation credits, transportation allowances, and RQAs.

This paper reviewed a number of alternatives that are available to provide more orderly milk movements to Class 1 markets while maintaining reasonable prices to fluid milk processors. Instituting any of the alternatives will alter milk marketing as it is known today. Some alternatives suggest penalties for quota-holding producers not serving the Class 1 market. Other alternatives recommend monetary incentives to encourage producers to ship to Class 1 processors. In any event, manufacturing plants and producers that ship to them may lose revenue from the pool because they will be less able to attract over-order premiums or command high “give-up” charges.

Economic incentives to supply Class 1 handlers were not needed at the time the milk pooling plan was established, but it must be recognized that the California dairy industry operated under vastly different production and marketing conditions. Minor adjustments in the current system are not likely to improve significantly the efficiency with which milk moves or reduce the total cost required to fund the program. It may be appropriate for the industry to consider alternatives to facilitate the movement of milk to fluid milk plants in light of the changes in market structure. Potential solutions may require fundamental changes in the pricing and pooling provisions. It should be clear that consumers and Class 1 handlers stand to benefit the most from adoption of these approaches to managing milk movements. The degree of success achieved will depend on a comprehensive review by all the stakeholders of the program, i.e., producers, processors, retailers and consumers.